

Compliance With Personal ID Regulations by Recreational Marijuana Stores in Two U.S. States

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ABSTRACT. Objective: The purpose of this study was to measure compliance with age and personal ID regulations by state-licensed recreational marijuana stores in two states. **Method:** Recreational marijuana stores ($N = 175$) in Colorado and Washington State were each visited twice by pseudo-buyer assessment teams in September 2016 to April 2017. The observer entered the store first, performed an environmental scan, and observed the buyer's purchase behavior. In both Washington State visits and in the first visit in Colorado, a young-adult buyer attempted to enter the store and purchase marijuana without showing a state-approved ID (i.e., valid driver's license). In the second Colorado visit, a buyer age 18–20 showed an underage driver's license and attempted to enter the store and purchase marijuana. **Results:** All stores

(100%) requested an ID. Stores refused buyers in 73.6% of visits at the entrance, 88.3% cumulative before the counter, and 92.6% by the time of a purchase attempt. Refusal was lower in Washington State (at entry, 53.1%; before the counter, 80.5%; and at purchase attempt, 86.6%) than in Colorado (at entry, 95.3%, $p < .01$; before the counter, 96.5%, $p < .01$; and at purchase attempt, 98.8%, $p < .01$), but it did not differ by buyer protocol ($p > .05$). **Conclusions:** Compliance with laws restricting marijuana sales to individuals 21 or older with a valid ID was high. Compliance in Washington State might be improved by having store personnel check IDs at the store entry. Although recreational stores may not be selling marijuana directly to youth, no information was collected on straw purchases. (*J. Stud. Alcohol Drugs*, 80, 679–686, 2019)

STATE-REGULATED SALES of recreational marijuana are legal in nine U.S. states. Similar to the alcohol market, only state-licensed stores can sell recreational marijuana products, and only persons age 21 and older who provide a valid state-approved ID can enter the stores and purchase marijuana. The age and ID regulations are intended to prevent youth access to recreational marijuana. These regulations complied with the Cole (2013) memorandum (now rescinded) from the U.S. Department of Justice (DOJ) that indicated state regulatory schemes must uphold the DOJ's priority of preventing distribution to youth. Increased access to marijuana can elevate the risk of initiation (Swahn & Hammig, 2000; Swaim, 2003; von Sydow et al., 2002).

It is important to investigate whether these age and ID restrictions are actually working. The prevalence of marijuana use is high among minors (Conway et al., 2013; Eaton et al., 2012; Johnston et al., 2013), so it is reasonable to expect that some minors may try to obtain marijuana from the recreational market, as has occurred in the controlled alcohol and tobacco markets. Compliance with age and ID regulations in alcohol and tobacco markets has been measured with decoys or buyers appearing to be underage (DiFranza et al., 2001; Grube, 1997; McKnight, 1993), which present an overt situ-

ation for refusing sales. Refusal rates with these assessments has been approximately 65% for alcohol (Paschall et al., 2007; Toomey et al., 2008) and more than 90% for tobacco (Glanz et al., 2007; Pearson et al., 2007). In a small-sample pilot study using a protocol with young adult buyers, the authors observed high refusal rates of 95% by recreational marijuana stores in Colorado in 2015 (Buller et al., 2016).

This article reports assessment of compliance with age and ID regulations (i.e., refusal rates) in a large, diverse sample of stores selling recreational marijuana in Colorado and Washington State. The analyses described ID checking behavior by store personnel, estimated refusal rates, and explored factors associated with refusal.

Method

Sample

A sample of 175 stores licensed to sell recreational marijuana by Colorado ($n = 85$ stores) and Washington State ($n = 90$ stores) was assessed. The sampling frame was the lists of licensed stores that were publicly available in 2016 from the Colorado Marijuana Enforcement Division (MED) and Washington State Liquor and Cannabis Board (WSLCB) containing the names and addresses of stores. The project biostatistician randomly selected stores from two regions within each state: the largest metropolitan area ($n = 40$ in Denver and $n = 40$ in Seattle) and a region outside each metropolitan area containing smaller cities, towns, and unincorporated areas to obtain a diversity of locations and control project costs ($n = 45$ in Colorado and $n = 52$ in Washington

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TABLE 1. Characteristics of pseudo-buyer team members and recreational marijuana store personnel

Variable	Pseudo-patron	Store personnel encountered by pseudo-buyer		
		At entrance	At counter	Total
<i>N</i>	18	349	34	383
Type				
Clerk/manager/owner	N.A.	72.6%	100.0%	75.1%
Bouncer/security	N.A.	27.4%	0.0%	24.9%
Gender				
Female	61.1%	40.3%	52.9%	41.5%
Male	38.9%	59.7%	47.1%	58.5%
Age, in years				
<i>M</i>	23.2	30.2	28.1	30.0
<i>SD</i>	2.6	7.3	5.4	7.1
Range	18–28	21–70	21–43	21–70
Ethnicity & race				
Hispanic	22.2%	17.5%	8.8%	16.8%
Black/African American	11.8%	14.9%	5.9%	14.1%
White	76.5%	79.6%	88.2%	80.4%
Other	11.7%	5.5%	5.9%	5.5%

Note: N.A. = not applicable.

State). State recreational marijuana regulators and local law enforcement agencies were notified about the assessments, indicating they would not result in enforcement actions. All protocols and forms were approved by the Western Institutional Review Board; the National Institutes of Health issued a Certificate of Confidentiality for this research.

Pseudo-buyer assessment procedures

Pseudo-buyer teams consisted of two people. Teams visited each recreational marijuana store during business hours on weekdays and weekend days. A supervisor assigned observer/buyer roles, checked completeness of data, and was available to troubleshoot problems and provide security at each visit. Two rounds of assessment were conducted at each store in two different weeks in 2016 and 2017. Assessment began 33 months after recreational marijuana sales commenced in Colorado and 27 months after they started in Washington State. At each visit, one person acted as the buyer and the other as the observer; different teams visited each store in the two rounds of assessment. Male and female pseudo-buyers took turns acting as the buyer to balance gender.

Two pseudo-buyer assessment protocols were used, a young-adult protocol (Buller et al., 2016) and a minor-decoy protocol. In both protocols, the buyer and observer approached the store together, acknowledging they knew each other. The observer was a young adult 21 or older in both protocols and gained entry first by showing their driver's license. The observers unobtrusively conducted an environmental scan of each store and positioned themselves next to the buyer, observing the interaction between the pseudo-buyer and clerk. Once the buyer completed the purchase attempt

and departed, or the observer completed the environmental scan when the buyer was refused entry, the observer left the premises.

Protocol 1: Young-adult buyer without ID. In the young adult buyer protocol, the buyer was age 21 or older but appeared young and should have been asked for ID to verify their age. After the observer entered the store, the buyer attempted to enter and make a purchase attempt. If asked for ID, the buyer said, "I forgot my ID" and did not present any ID. If the entry was refused, the buyer politely thanked the clerk and left. If the buyer was allowed to enter the store, the buyer approached a clerk, scanned the recreational marijuana products on offer, and requested to purchase pre-rolled joints. Once the clerk stated the price and requested payment, the buyer said that he/she did not have enough money and left the store. The buyer never purchased any marijuana products; this restriction by the federal funding agency was strictly adhered to. The young adult buyer protocol was used in one assessment round in Colorado and both rounds in Washington State.

Protocol 2: Minor-decoy buyer with ID. In the minor-decoy buyer protocol, the buyer was age 18 to 20. The buyer followed the same procedures as in the young adult buyer protocol with the exception that if asked for an ID, the buyer presented her/his valid driver's license, showing that he/she was under 21 years old. Although it is illegal for minors to enter recreational marijuana stores, the minor protocol was acceptable to Colorado MED staff but not to WSLCB regulators, who requested that we not perform it.

Pseudo-buyers/observers

Eighteen persons served as pseudo-buyers (i.e., buyers and observers), varying in race/ethnicity and gender (Table 1). In the young adult buyer protocol, they were all 21 or older ($M = 24.1$ years; range: 22–28 years) and selected because they appeared young, possibly under age 21. In the minor-decoy buyer protocol, buyers were between ages 18 and 20 ($M = 19.0$ years; range: 18–20 years). In 11 cases, the supervisor acted as the observer because one of the confederates was unexpectedly unavailable.

The pseudo-buyers were trained in standard pseudo-patron methods using protocols modified from the authors' earlier work on alcohol outlets (Woodall et al., 2018) and pilot study with recreational marijuana stores (Buller et al., 2016). In the training, they learned the purpose of the assessment and were instructed in procedures for the observer and buyer, including ways to respond to various possible reactions by the store personnel (e.g., refused/allowed entrance), how to complete the observer and buyer forms (see below), and what to say if store personnel questioned their legitimacy. Pseudo-buyers practiced the buyer and observer procedures during the training, including at stores not in the study, receiving corrective feedback from the trainers.

Buyer/observer forms

Following each visit to a store, the buyer and observer completed data forms modified from our research on alcohol sales (Woodall et al., 2015, 2018) and pilot tested with recreational marijuana stores (Buller et al., 2016). They recorded whether the buyer was permitted to enter the store and whether the clerk indicated that he/she was willing to sell recreational marijuana to the buyer. Given ID checking procedures in various stores, pseudo-buyers could be refused at three places in the stores—at the entrance, on the sales floor before reaching the sales counter, and during the purchase attempt at the sales counter. Refusal at any one of these points indicated no willingness to sell recreational marijuana. However, refusal at all three places was also examined separately, because state regulations did not allow customers to enter a store or be on the sales floor without a state-approved ID showing that they were 21 or older. The buyer and observer reported the gender, estimated age, and ethnicity of the store personnel who interacted with the buyer; interobserver reliability of these assessments was high ($\kappa = .924$, intraclass correlation = .865, and $\kappa = .803$, respectively). Observers recorded posted warning signs, number of store staff, environmental features of the store (lighting, cleanliness, outdoor area free of debris), comments from the store personnel regarding the buyer, and type of marijuana product buyer asked to purchase.

Analysis

The number of stores that refused to sell recreational marijuana to the buyer at entry, on the sales floor, or during the purchase attempt at the counter was summarized and the rate of refusal calculated as percentage of stores that were not willing to sell (i.e., either did not permit entry, did not permit presence on the sales floor, or refused to sell at purchase attempt). Refusal rate was compared between stores based on types of marijuana product sold (recreational vs. recreational and medical), gender and ethnicity/race of buyer and clerk, state (Colorado vs. Washington State), and location (large metropolitan area vs. outlying region) using chi-square tests or Fisher's exact tests, with alpha coefficient set at .05 (two tailed).

Results

The sample of stores and store personnel was diverse. Slightly more stores sold recreational marijuana (54.3%) as opposed to selling both recreational and medical marijuana (45.7%). On average, there were 3.2 staff persons ($SD = 1.7$; range: 1–15) working in the stores during the visits. About a quarter of personnel at the store were security personnel or bouncers; all other personnel were owners, managers, or clerks. There were more men than women working at the

entrance and 37.9% appeared to be racial/ethnic minorities. Personnel appeared to be young (about 30 years of age) but about 5 years older than the pseudo-buyers. See Table 1 for characteristics of store personnel.

ID checking rates

Combined across both pseudo-buyer protocols, buyers were asked to present an ID at some point in all of the visits (100.0%) to the recreational marijuana stores. More pseudo-buyers had their IDs checked at entry in Colorado (98.2%, $n = 167$ of 170 visits) than in Washington State (57.5%, $n = 103$ of 179 visits, $\chi^2[1, N = 349] = 82.45, p < .01$). More pseudo-buyers had their IDs checked on the sales floor after entrance in Washington State (73.8%, $n = 62$ of 84 buyers who reached the sales floor) than in Colorado (25.0%, $n = 2$ of 8 buyers who reached the sales floor, $\chi^2[1, n = 92] = 8.22, p < .01$). Of the 41 buyers who did reach the counter, 50.0% in Colorado ($n = 3$ of 6 buyers) and 37.1% in Washington State ($n = 13$ of 35 buyers) were asked for an ID when making a purchase attempt.

Refusal rates

Refusal rates that prohibited purchase attempts were high (Figure 1), with 92.6% of pseudo-buyers ($n = 323$ of 349 visits) refused at some location in the stores. Buyers made a purchase attempt at 26 out of 349 visits to the 175 stores (17 attempted to buy prerolled joints, 9 tried to buy another marijuana product). However, refusal rates overall were lower in Washington State than in Colorado (Colorado 98.8%, $n = 168$ of 170 visits; Washington State: 86.6%, $n = 155$ of 179 visits; $\chi^2[1, N = 349] = 18.92, p < .01$), and this was the case at each location (entry, sales floor, and counter) in the stores, $\chi^2(3, N = 349) = 82.49, p < .01$ (Figure 1). However, there was no statistically significant difference in refusal rate at entry by state when an ID was requested (97.0% in Colorado; 92.2% in Washington, $\chi^2[1, n = 270] = 3.17, p = .08$).

Other variables associated with refusal rate at entry included type of stores, race/ethnicity of pseudo-buyers, staff role, and race/ethnicity of buyer–staff combination (Table 2). Stores that sold both recreational and medical marijuana had a higher refusal rate at entry than those selling recreational marijuana only. Buyers were more likely to be refused entry by a security person/bouncer than other staff (i.e., clerk, manager, or owner). Hispanic White buyers were refused more often at entry than buyers who were non-Hispanic White or another race/ethnicity. The combination of non-White buyers and White staff had the lowest refusal rate for entry.

When the buyer did not present an ID in the young-adult protocol, the most common reactions by store staff were to ask if the buyer had any other ID (38.9%), state that it was against

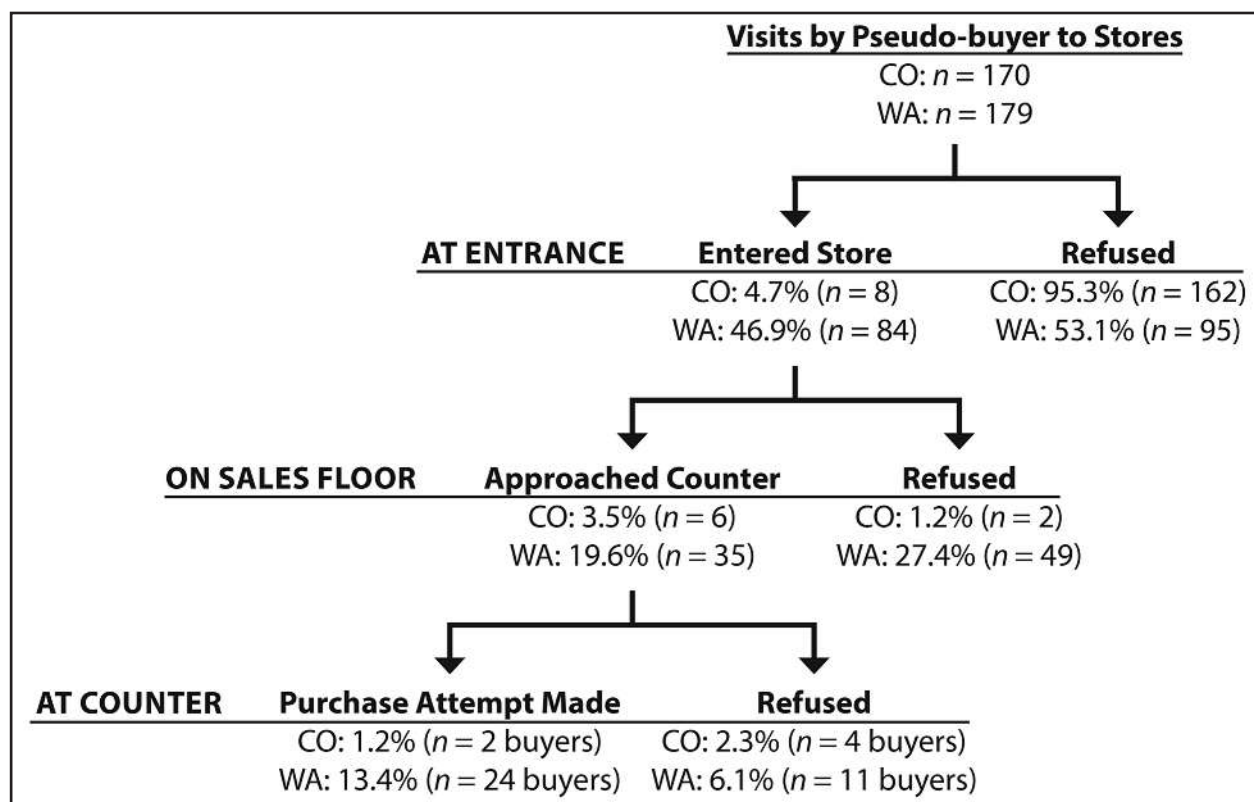


FIGURE 1. Refusal rate (% , n) for pseudo-buyer visits at entrance, on the sales floor, and at the counter in Colorado (CO) and Washington State (WA) recreational marijuana stores

the law to allow the buyer in without an ID (26.5%), or say that they were refusing entry because the buyer was under 21 (22.2%). After the buyer departed, the observer noted that in most cases, store staff had no reaction (48.8%), simply said goodbye (31.8%) or were apologetic that they could not let the buyer enter the store (12.0%). In 4.3% of cases, the store staff seemed suspicious or angry that the buyer attempted to enter. The clerks told the buyer to come back with more money in 3.0% of the cases when they had reached the counter and made a purchase attempt. In 19 visits (5.4%), store personnel suggested that the buyer have the observer purchase marijuana for the buyer who was not permitted to enter the store (a potentially illegal third-party sale).

Comparison of pseudo-buyer protocols in Colorado stores

Refusal rates were not different between the young-adult buyer (without ID) (100.0%) and minor-decoy buyer (with ID) protocols in Colorado (97.6%; $\chi^2[1, n = 170] = 2.02, p = .15$).

Posted warning signs

Several warning signs were posted in the stores (Table 3). The most commonly observed signs stated that there

was no entry for minors (required in both states) and a valid ID was required for entry. Just under half of stores displayed the store license (required in Washington State) and signs identifying limited access areas (required in Colorado). Approximately a third of stores had signs announcing that firearms were not permitted in the store and packages of marijuana could not be opened on the premises (both required in Washington State). Signs warning that marijuana could not be consumed on the premises or in public were displayed in one fifth of stores. Less frequently observed signs provided information on dosing edible products, addressed the risk of consumption to pregnant women, announced that the store had the right to refuse sales to customers or that no sales would be made to intoxicated customers, and indicated a risk of poisoning from consuming the products. Observers saw an educational brochure on the safe use of marijuana in 13% of stores. Colorado stores had more signs on the need for a valid ID, limited access areas, and dosing of edibles, and the educational brochure (limited access sign required in Colorado), whereas Washington State stores had more signs on prohibition of firearms, opening packages and consuming marijuana on the premises, consumption in public, and pregnancy warning (all but public consumption signs are required in Washington State) (Table 3).

TABLE 2. Refusal rates at entrance and at purchase attempt at the counter by buyer protocol and store, buyer, and store staff characteristics

Variable	Refusal rate for entry	Refusal rate for purchase attempt
<i>N</i>	349 visits	41 visits ^a
Overall	73.6%	36.6%
Type of store		
Recreational only	64.2%**	29.0%
Recreational and medical	84.9%	60.0%
Region		
Large metropolitan areas	78.7%	53.3%
Outlying areas	69.6%	26.9%
No. of employees observed to be working in the store during buyer's visit		
Odds ratio	1.783**	1.746
[95% CI]	[1.419, 2.241]	[0.911, 3.345]
Pseudo-buyer		
Sex		
Male	78.2%	21.1%
Female	70.5%	50.0%
Ethnicity/race		
Non-Hispanic White	76.9%*	31.0%
Hispanic White	84.2%	66.7%
Other	64.8%	44.4%
Age		
Odds ratio	0.875**	0.966
[95% CI]	[0.799, 0.958]	[0.728, 1.281]
Staff who engaged with buyer		
Role		
Clerk	65.8%**	34.5%
Manager	60.0%	0.0%
Bouncer/security person	89.1%	50.0%
Other	100.0%	0.0%
Sex		
Male	75.7%	42.1%
Female	71.2%	33.3%
Ethnicity/race		
Non-Hispanic White	70.2%	25.9%
Hispanic White	87.5%	66.7%
Other	77.0%	55.6%
Age		
Odds ratio	0.999	0.999
[95% CI]	[0.968, 1.031]	[0.899, 1.111]
Buyer-store staff combination		
Sex		
Female buyer/female staff	70.6%	55.6%
Female buyer/male staff	70.5%	46.2%
Male buyer/female staff	72.1%	16.7%
Male buyer/male staff	83.8%	33.3%
Ethnicity/race		
White buyer/White staff	77.8%*	23.8%
White buyer/non-White staff	77.4%	55.6%
Non-White buyer/White staff	61.9%	44.4%
Non-White buyer/non-White staff	76.2%	0.00%

Notes: CI = confidence interval. ^aThe buyer reached the counter and made a purchase attempt at 41 of the 349 store visits.

* $p < .05$; ** $p < .01$.

Discussion

Compliance with laws restricting stores to selling recreational marijuana to individuals 21 or older presenting a valid ID was high, although almost half of pseudo-buyers were able to enter the stores in Washington before having their IDs checked. Refusal rates exceeded those for alcohol (Lynne-Landsman et al., 2016; Paschall et al., 2007; Toomey

et al., 2008) and are similar to those for tobacco (DiFranza et al., 2001; Glanz et al., 2007; Pearson et al., 2007; Williams et al., 2014). There are several explanations for this high compliance. Regulators in both states worked with the industry, performed compliance checks (Washington State checks each store yearly [Wiens et al., 2018]), and penalized stores that failed. Store management may have closely monitored store personnel and checked that they complied with age and

TABLE 3. Signage observed in recreational marijuana stores by state

Was a warning sign posted for:	Total	Colorado	Washington State
<i>N</i>	349	170	179
No entry for minors (under 21) (C, W)	94.0%	94.1%	93.9%
Valid ID required for entry	78.0%	84.3%	72.1%**
Store license (W)	48.8%	52.4%	45.5%
Limited access area (C)	47.1%	86.8%	10.1%**
Firearms prohibited (W)	39.7%	10.9%	66.3%**
No opening package of marijuana/ marijuana-infused product (W)	34.9%	1.8%	65.4%**
No consumption on the premises	23.3%	10.9%	34.6%**
No consumption in public (W)	21.6%	8.5%	33.7%**
Educational brochure	13.1%	21.1%	5.6%**
Information on edibles/dosing	12.2%	17.6%	7.3%**
Pregnancy warning (W)	7.3%	3.7%	10.7%*
Right to refuse service	6.4%	4.9%	7.9%
No sale to intoxicated people	3.5%	3.0%	3.9%
Poisoning warning	2.3%	2.4%	2.3%

Notes: C = type of signage required in Colorado; W = type of signage required in Washington State.

* $p < .05$; ** $p < .01$.

ID regulations because licenses are valuable and revenues are sizable. The recreational marijuana industry also may want to avoid any appearance that they are selling to minors to avoid increased federal scrutiny and controls. In addition, the exclusive focus on selling marijuana may have increased vigilance; two studies have suggested that stores selling just alcohol or tobacco were more likely to refuse sales than stores selling other products, too (e.g., convenience and grocery stores) (Paschall et al., 2007; Pearson et al., 2007).

However, there were differences between stores in Colorado and Washington State. The compliance in Colorado was high, as it was in an earlier small-sample pilot study (Buller et al., 2016). The lower refusal rate in Washington State may have arisen from the failure to check IDs at the store entry. More than 40% of buyers made it onto the stores' sales floor in Washington State without having their IDs checked, and only about three quarters were checked before making the purchase attempt. Checking IDs at the door may be an effective compliance technique. When buyers are able to interact with the clerk at the counter and select a product for purchase, clerks may believe erroneously that some other employee checked their IDs, establish a relationship with buyers, and/or feel pressure to conclude the sale. Another concerning finding was that a number of store personnel suggested that the observer purchase marijuana for the buyer who was refused. Such third-party sales are illegal (although in Washington State, marijuana can be given as a gift) and circumvent the age restriction. Regulations and training should aim to deter such third-party sales.

There was concern that the young-adult buyer protocol without an ID set a low threshold for refusing the pseudo-buyer. Store personnel did not have to actually decide if an ID was valid, just if a state-approved ID was presented. However, the comparison between the two buyer protocols in Colorado suggested that having a minor present an actual ID showing they were underage did not reduce compliance.

Although this comparison may have been undermined somewhat by the increased rate at which Colorado stores checked IDs at entry, store personnel in Colorado seemed able to identify accurately that the minor-decoy buyer was underage. The rate at which Washington State store personnel would accurately identify and refuse minor decoys is unknown.

The differences in refusal rates by buyer and store characteristics were notable. Clerks may be hesitant to refuse a non-White buyer to avoid any appearance of discrimination based on ethnicity. Alcohol and tobacco sales have differed by number of Hispanics and immigrants in a community, but not consistently (Freisthler et al., 2003; Lipton et al., 2008; Toomey et al., 2008). Clerks appeared to rely somewhat on physical appearance of youth when deciding to refuse entry, as has been witnessed in tobacco sales (Pearson et al., 2007; Williams et al., 2014). However, there was no association with gender of buyer, which has occurred at times in tobacco sales (Pearson et al., 2007; Williams et al., 2014). Compared with small stores, larger stores (i.e., with more employees) may be more vigilant (as they have been in alcohol sales [Paschall et al., 2007]) because of greater professionalism or larger financial risk of noncompliance. Personnel at stores selling both recreational and medical marijuana may have more years of experience checking ID than at recreational-only stores (although Washington State eventually shut down medical-only stores in 2016, several medical-only stores in both states obtained licenses to sell recreational and medical marijuana). These findings suggest that clerks need to be trained to be attentive when checking IDs regardless of buyer race/ethnicity and apparent age, house policies must be observed, and regulators need to monitor further stores that are smaller and selling only recreational marijuana. Colorado recommends responsible vendor training, including ID checking, but currently most training in both states is informal, conducted by store managers and employees (Buller et al., 2019; Walters et al., 2018).

In terms of signage, in both states compliance was high with rules requiring signs declaring that entry by minors was prohibited (94%) and moderate regarding the need for an ID to enter (72% and 84% in Washington State and Colorado, respectively). However, it was seriously deficient in almost every other type of sign. Posting of required signage is controlled by store managers, so their failure to comply with signage rules may be less excusable than failure to follow ID checking rules, which can be undermined by uncooperative, careless, or unskilled staff. Posted warning signs were associated with lower alcohol sales to underage youth in one study (Paschall et al., 2007)—although not for tobacco sales (Pearson et al., 2007)—suggesting that they can have a deterrence effect on the clerks' behavior. Of further note, signs stating that the store would not sell to intoxicated customers were uncommon. Many states have prohibitions against sales of alcohol to intoxicated patrons (Mosher et al., 2009). However, Colorado's laws are silent on such sales in the marijuana market, whereas Washington State regulations prohibit intoxicated customers from being on the premises. Last, some store managers may have posted signs on properly consuming edibles in response to news stories on improper use of these products.

The study had several strengths and a few limitations. The sample contained stores in diverse locations in two states and each store was assessed twice. The gender and race/ethnicity of pseudo-buyers were varied. However, the assessment was conducted on a recreational marijuana industry that is relatively new and operating under conflicting state and federal laws. The young-adult protocol presented a low bar for the clerks (e.g., no use of fake IDs) although minor decoys presented an actual ID and were refused at high rates also. Compliance may decline as the marketplace matures, public acceptance and normalization increase, and more stores are licensed. In addition, the results are from just two states, possibly limiting generalizability. Some states permit home delivery—where ID checking may be less closely monitored—and gifting, which might increase access to those refused entry.

Public health implications

The recreational marijuana market has been created in an extremely short time by a small number of bellwether states. Timely evidence is needed to determine how well the regulations are performing and identify areas for improvement. The high compliance in this study suggests that recreational marijuana stores may not be selling directly to underage youth on premises very often, although this study can shed no light on how often youth obtain marijuana indirectly from licensed stores (i.e., through straw purchases). Evidence reported here can help other states that are creating their recreational marijuana market currently or in the near future.

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